

VOLUME 79

SEPARATE No. 346

# PROCEEDINGS

AMERICAN SOCIETY  
OF  
CIVIL ENGINEERS

NOVEMBER, 1953



## STATUTORY CONTROL OF GROUND WATER

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## IRRIGATION AND DRAINAGE DIVISION

*{Discussion open until March 1, 1954}*

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Printed in the United States of America*

**Headquarters of the Society**  
33 W. 39th St.  
New York 18, N. Y.

PRICE \$0.50 PER COPY

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This paper was published at 1745 S. State Street, Ann Arbor, Mich., by the American Society of Civil Engineers. Editorial and General Offices are at 33 West Thirty-ninth Street, New York 18, N. Y.

## STATUTORY CONTROL OF GROUND WATER

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### Introduction

The rapid increase in the use of ground water in recent years in several of the western states has resulted in overdrafts in numerous areas. These conditions are causing widespread concern. While the recent high crop prices have enabled the costs of irrigation pumping to be met, sooner or later the increasing lift will reach a point where pumping will no longer be profitable. It is this economic limit rather than the complete physical depletion of the ground water resource which presents the main problem in the majority of such areas.

There is a public interest in such conditions as the abandonment of any substantial amount of development affects the economy of the adjacent area and of the state as a whole. Prevention is the best remedy and there has been much consideration given to means by which public control may be exercised to restrict overdraft and maintain a stable economy.

To meet the overdrafts on their natural ground water supplies some areas have been able to secure supplemental water. Such artificial ground waters may be the result of the so-called "spreading" of flood waters on nonproductive absorbent areas or they may be the by-products of surface irrigation. Such artificial ground waters involve additional questions of title to their use and control.

Statutory control of ground water alone does not meet the entire problem. Securing the factual material required for the administration of any system of ground water regulation in each ground water area will be as difficult as the selection of the principles of control to be used.

The following discussion is an attempt to cover the basis on which the control of natural and artificial ground waters may be established in the interests of both the individual users and the general public. The larger part of the references are to conditions in California. Natural and artificial ground waters are separately discussed.

### Occurrence of Ground Water

Ground waters are percolating or in subterranean channels. Nearly all ground waters percolate slowly through the generally porous underground materials. Occasionally ground water occurs and moves in definable channels. Use from such subterranean streams follows the same rules as use from surface streams. Ground waters are assumed to be percolating unless a defined channel can be proven.

Percolating water may occur as saturation of an underground material either unconfined or between confining beds. Confined percolating water is usually under some amount of pressure. Where the pressure exceeds the depth of the confining materials, flowing wells can be secured. Confined

percolating waters are generally referred to as artesian basins, both where the pressure may produce surface flow and where the ground water may rise only partly to the ground surface.

Pressure areas have confining top strata and usually have confining lateral boundaries so that such areas represent definable ground water basins. While unconfined percolating ground waters may have definite lateral boundaries, the saturated material may blend into tighter formations. Unconfined ground waters may occur under conditions which permit defining separate ground water areas.

The ability to define the margins of ground water basins has been used as the basis for the separate control of percolating water in basins where similar control of generally diffused ground water has not been undertaken. Ground water control in New Mexico is limited to water in definable basins. A common interest among the overlying owners is more easily recognizable in ground water basin than in vagrant percolating waters.

#### General Basis for the Control of Ground Water

When conditions arise under which it is essential that new points of law be established or more detailed definition of principles be made, the controlling influence is the public interest. Where not bound by established precedents, courts and legislatures seek the basis that will best meet the public needs. While changes cannot be made in established principles which would result in the equivalent of taking property without compensation, in new fields the legislatures and the courts have much latitude in determining what may best serve the public interest. There has been an increasing emphasis on the public interest in the conservation of all natural resources. The police powers can be used to secure regulation short of an actual taking of the property being regulated.

#### Natural Ground Waters

##### Title to Natural Ground Waters

Like many other subjects, the basis of the title to the use of ground water is not uniform in the different states. There are three separately recognizable standards of title with additional variations.

The earliest basis of title to ground water is the English Common Law of complete ownership by the overlying owner. Under the English law, the ownership of all underground materials, including water, is in the ownership of the surface. A landowner under the English Common Law could not cause legal injury to a neighbor by any ground water draft he might make. This rule does not recognize that ground water moves and may be a common source of supply to many owners. The English system of title is sometimes referred to as the right of capture as any overlying owner may capture whatever ground water he can secure from within his land.

Extensive ground water draft resulted in inequities under the English Common Law. This led the courts of many states to recognize various degrees of correlative rights among the overlying owners which some form of proportional use is permitted. Some western states have applied the appropriation system used on surface streams to their ground waters.

While the elements of one or more of these three systems of title have been adopted in each of the western states, the variations in their application make it difficult to classify some of these states as following any one of these systems for all ground waters.

#### Control of Ground Water Waste

The right to control waste of ground water is well established. Such waste is usually limited to loss from uncapped artesian wells. In some cases control of such waste has been based on the prevention of surface nuisances or the protection of public health. Control can also be based on the general power to prevent waste of a natural resource.

For percolating ground water not under sufficient pressure to rise to the ground surface, the cost of pumping usually controls the waste of the water pumped. Ground water movement from under one owner's land to another's may represent a loss in opportunity to secure a ground water supply but is not a loss or waste of the supply itself.

#### Requirements of Beneficial Use

All western states have authority to limit use to reasonable standards of beneficial use. In California the constitutional amendment of 1928 (Article XIV, Section 3) limits all users to reasonable amounts and methods of use. Limitations to beneficial use go much beyond the prevention of waste. A use may produce a benefit and still not be reasonable in relation to other uses which are available for the same water supply. With the increasing demands for water in the arid areas there is a continuing trend toward a more strict interpretation of the standards of beneficial use. A prohibition, by county ordinance, of use for less beneficial purposes where the prohibited use had only limited benefit and depleted the supply available for other uses has been upheld in California (*Ex parte Maas*, 27 P (2d) 373 in 1933). The western states either have, or can secure by proper legislative action, authority to require a reasonably high standard of beneficial use of their ground waters.

#### General Ground Water Controls

Control to prevent depletion of a ground water supply, to prevent deterioration of quality, or to secure economic conditions of draft represent different practices than the preservation of wasteful flow from an artesian well. Such controls must rest on a broader interpretation of the public interest under the police power. Overdraft on a ground water supply may be detrimental to the interests of the overlying owners using the draft and indirectly detrimental to the general public but such overdraft is generally used without waste.

#### Regulation Among Individual Users

Under the English Common Law, control of ground water draft by statutory authority would be inconsistent with the basis of this law. The English Common Law of ground water is now in effect in only a few areas having problems of overdraft.

Under systems of correlative rights, control of draft can be established for the purpose of securing to each user his share of the available supply. A determination of the individual shares would be required as a basis for such

control. Control can be exercised by an organization of the overlying owners, by a court in the enforcement of its decree or by a state administrative agency. A state agency can function either under its own determination of the rights or by appointment by the court.

Where the appropriation system is used, the administration of ground waters is similar to that for surface streams when the extent and priority of the rights have been defined. Control would consist in limiting the total draft to the safe yield of the supply.

#### Artificial Ground Waters

The general law of ground water has been developed to cover the use of the naturally available ground water supplies. Such supplies are frequently less than the demands. Where surface storage may not be available surplus surface supplies, in some areas, can be placed underground as a supplemental ground water supply. Where this is done, the title to the use of the artificial supply may rest on different principles than those applicable to the natural ground waters.

The beneficial use represented by spreading surplus surface waters on absorbent areas as a means of replenishing ground water supplies was recognized by the California Legislature in 1919 (Calif. Water Code, Sec. 1242). Such storing of water underground was declared to be a beneficial use for which an appropriation could be made. In some areas temporarily available surplus waters have been purchased for replenishment of underground supplies. Other artificial sources of ground water are the by-product of surface irrigation where the conveyance losses and percolation from the lands served may augment the local natural ground waters. Importation of water from outside drainage areas for both supplemental surface irrigation and for ground water recharge is the basic justification for the Central Valley Project.

#### Control of Use of Artificial Ground Water

The right to recover artificial additions to the ground water may be vested in the individual landowners, in organizations of overlying landowners, in a non-land owing agency or in the State. The nature of the rights to recover artificial ground waters can best be discussed separately for each of these four types of ownership.

##### 1 - By the Overlying Owner

Where no separate claims of ownership of artificial ground waters are made by the agency responsible for their occurrence, the artificial supply becomes the equivalent of abandoned water in surface streams. Such abandoned ground water would mingle with the natural supply and be subject to the same basis of title as the natural supply.

Such abandonment occurs in many irrigation systems where the organization providing the supply for surface irrigation makes no further claim to the canal seepage or land percolation which joins the natural ground water supply under the irrigated lands. There may be a liability on the agency providing the surface supply if the artificial ground water increment causes damage and some forms of such agencies supplying surface irrigation are responsible for providing any needed drainage of the lands served.

Any efforts to restrict ground water use by individual overlying owners to their natural ground water, thus leaving the artificial supply as a separate source available for other use, will face physical problems more difficult

than the legal issues which may be involved. Separate identification of the artificial supply would be a first requirement in any attempt to establish separate title to its use.

**2 - By Organization of Overlying Owners**

The physical works required to provide artificial ground water supplies usually involve costs which exceed the resources of individual owners. The natural result is some form of organization of the benefited landowners. There may be a similar need for an organization to act for all owners where conflicts with outside use may arise.

This need was recognized in 1913 by the California Legislature which provided a form of county water district having authority to sue in behalf of its included landowners to protect their ground water rights even though the district itself does not claim the ownership of the natural ground waters in the district (California Water Code, Division 12). Such county water districts are also given powers under which the district may restrict use by its landowners. The landowners are bound by the results of suits by the district and can be taxed for their costs (Coachella Valley Co. Water Dist. v. Stevens, 206 Cal. 400 in 1929).

Comments of the court in the Coachella case can be interpreted to imply similar powers in California irrigation districts. In Los Angeles v. Glendale (23 Cal. 2d 68) the case of Stevens v. Oakdale Irrigation District (13 Cal. 2d 343) was cited on the right of an irrigation district to recover surface waters and used to support the recovery of percolating water.

California also has available acts for the creation of water conservation districts which have similar powers in relation to ground waters to the above form of county water district.

**3 - By Agency Storing Ground Water Under Lands of Others**

This group includes organizations which do not own or represent the lands under which the artificial ground waters may be stored. Examples are the claims of the Bureau of Reclamation to the recovery of waste and seepage resulting from the use of project water delivered to contracting units. Also included, in part, are some California areas where the ground waters stored are used on both overlying and distant lands.

It has been the usual practice of the Bureau of Reclamation to include a clause reserving to the United States the right to all return flows and waste from the contracting areas. This resulting right of recovery has been sustained for surface return flows (Ide v. U.S. 263 U.S. 487). Similar clauses have been inserted in some of the water purchase contract being made with units under the Central Valley Project where any resulting escaping water will be outward percolating ground water rather than surface waste.

The extent to which a water supplying agency, such as the Bureau of Reclamation, may establish a claim to artificial ground water having their source in percolation from the conveyance and surface use of the purchased water supply has been and is a very active subject in the areas under the Central Valley Project. A large part of the water to be purchased by the local units is to be delivered outside of the irrigation demand to be placed in ground water storage within the area of the contracting unit. This further complicates a situation which would be complicated enough if only surface uses were involved.

Any attempt by the supplying agency to claim seepage and waste from the water provided by the project while such ground water is within the area of the contracting unit involves both legal and physical questions. Such ground

waters are not wastes while under the lands contracting for service as the water supplies for nearly all lands in the contracting units of the Central Valley Project are based on recovery and use of the available natural and artificial ground waters. In no units is it planned to acquire sufficient project water to result in high ground water and surface return flows. Any application of the recovery clauses in the Bureau of Reclamation contracts appears to be limited to waters escaping from the contracting units and being found under lands not under contract with the Bureau. When the physical difficulty of identification is added to the legal uncertainty of the right to enter non-contracting areas to recover any such waters, such claimed rights of recovery appears to have only limited prospect of value.

An additional item which has entered into the Central Valley Project has been the attempt to control the size of ownership by means of restrictions on the delivery of project service. This is the acreage limitation of the reclamation law. Where project service is entirely by surface delivery, physical controls on delivery can be readily enforced. Where project service is by means of ground water recharge to which every landowner has access through wells entirely in his ownership and control, no effective means has as yet been suggested for preventing ground water draft on excess acreages. These acreage issues are now before the California courts in cases in which final answers may eventually be secured.

In the City of Los Angeles v. Glendale, *supra*, the court held that Owens River water brought to the San Fernando Valley and either sold for use there or spread for ground water storage remains the property of Los Angeles. The water spread for ground water recharge was held to be commingled water en route to the point of recovery and use. Percolation from the use of water sold by the city was given a similar status. This decision may not be controlling in areas of general percolating water as the comments of the court indicate that it considered the ground waters involved to be a part of the general subflow of Los Angeles River which would become a part of the river flow within the pueblo right of Los Angeles.

#### 4 - Control by the State

The unappropriated waters in any western state are in the ownership of the State or under its control. In states recognizing the appropriation system for ground water, state control of its appropriation follows from the similar control of surface streams.

The State can also exercise police power control over ground water in the interest of the public. Such police powers can be used for the prevention of waste and damage.

If a state should undertake to acquire water and to place it underground as an addition to the natural ground waters without ownership of the lands under which the artificial ground waters would spread, it would act in a proprietary capacity and be subject to the same rules as any other non-land owing agency seeking the same results.

The state also acts in a judiciary capacity in defining titles to the use of ground water. In California the State Engineer may act as referee for the court in ground water suits. As such referee he investigates the facts and makes recommendation to the court on the issues. Following adjudication of the individual ground water rights in a ground water area the state engineer may act as the watermaster for the enforcement of the decree.

### Control of Oil and Gas

The early law of oil and gas was based on the law of minerals in place. Each landowner could capture whatever oil and gas he could secure from underneath his land. This principle led to competitive drilling, offset wells and production in excess of the market demand.

In recent years there has been a general recognition of the need for conserving natural resources such as oil and gas. The right of a state to prevent waste of these resources has been recognized since the U.S. Supreme Court in 1900 (Ohio Oil Co. v. Indiana, 177 U.S. 910) upheld an Indiana statute prohibiting the waste of gas merely to provide pressure for oil production. In this decision the court recognized that oil and gas move underground and that all owners have a joint interest in their common supply.

Oil and gas are classified as non-replaceable minerals which, when once taken, are not replaced by natural processes within the time periods recognized by law. Re-cycling of gas or water is not a contradiction of this statement as such operations are for the purpose of increasing the production of the oil already in the ground and do not create new supplies.

Statutory means have been found for securing increased recovery and for preventing wasteful production and excessive drilling. This has required changes in the former conceptions of the rights of overlying lands, recognition that oil and gas occur in definable fields and that all owners in a field have a common interest in its best development.

#### Interstate Control of Oil and Gas

The Interstate Oil Compact was approved in 1935 and the Interstate Oil Compact Commission was established to administer interstate matters and to exercise leadership in the educational activities necessary in securing consistent policies among the oil producing states. Over 20 states are now members of this compact commission which has functioned successfully in its field. This interstate compact and its administration is a good example of the ability of the states to function in interstate matters without requiring federal control or domination. Where interstate ground waters may need joint action by the states concerned, similar use can be made of the interstate compact method.

#### Unit Operation

A major step in the control of oil and gas production has been the recognition of each oil field as a unit in which all landowners had a mutual interest. Earlier unit operation plans were based on the voluntary action of the landowners. Where all owners consent such voluntary plans meet the needs. Where complete consent could not be secured, demands arose for various degrees of compulsory unit operation. Some states have provided for compulsory unitization and have created state agencies for this administration. In other states the initiation of the procedure for the unit operation of each oil field requires a petition of a majority of the affected owners. Where carefully drawn the unitization statutes have been upheld as a proper exercise of state authority over its natural resources and the prevention of their waste.

#### Summary and Conclusions

The increasing importance of the use of ground water in the western states and the overdraft that now exists in many areas makes it essential that means be found to enable individual users to secure their equitable

share of the available supply and to limit draft to the safe yield in order to secure permanent and economic use. The delay in the accomplishment of these results has been due as much to the lack of agreement on the methods to be used as it has been in finding legal means for its accomplishment.

Restricting the draft to the average recharge is a natural objective in the apportionment of ground water supplies among individual owners in areas following correlative rights. In areas following priority of appropriation such restrictions can be supported on the basis that the average rate of recharge is the measure of the supply subject to appropriation.

The statutory basis for ground water control has not, as yet, been fully developed. Care is required in drawing the line between regulation in the public interest under the police powers and the taking of property without due process. However, the legal status of rights to the use of ground water has not been so tightly frozen by present precedents that means cannot be found, short of an actual taking of property, by which the public interest can be served.

In California it may be considered that the 1928 amendment to the State Constitution is not broad enough to support limitations on ground water draft where all use is reasonable but the total draft exceeds the available supply. An additional constitutional amendment may be needed to authorize control of the draft under such conditions. This can be supported on the ground of the general welfare in order that those entitled to use such supplies may be protected in their use and overdraft may be prevented. With such constitutional support for the principle to be used, the State Legislature can provide statutes for its enforcement.

There does not appear to be a need for separate statutory control of artificial ground waters. When abandoned and mingled with the natural supplies, the artificial sources become a part of the natural supplies and would be subject to the same controls. If the artificial supplies are provided under conditions where title to their use is retained, separately from the natural supply, the terms and conditions under which such title is established should enable their use to be controlled in the interest of the agency having such separate title.

Conditions in the western states vary and it is not to be expected that any one method will give the best results in all states. Each state should work out the solution which best fits its legal background and the physical conditions of its area.

Similarly conditions within a state vary and different areas may need different degrees of control enforced at different stages in their development. Such variations can be secured by general authorization laws based on local initiative for placing them in effect. While there is a general state interest in the best use of ground water as a natural resource and to prevent general losses resulting from abandonment in badly overdrawn ground water supplies, the landowners in the ground water areas are the principal parties of interest and should have a major voice in the selection of the extent of the control and the time and form of its enforcement. Ground water naturally present under land is a property of the overlying owners and they are entitled to full consideration in its control.

To represent the landowners in a ground water area it is desirable to have some form of district organization whose initiation rests with the landowners and whose powers, when organized, include a right to tax the included lands and to act for the area in matters affecting its ground water supply. Such forms of public agency are now available in some states including California and can be provided in other states when demand for them may arise.

Preferably such districts should include all land in a ground water basin. Where distinctions in control in different parts of the basin may be needed provisions for subdivisions, such as those in the Texas underground water conservation district act, can be used. Such districts are the equivalent of the unit fields in oil and gas control.

The control of the use of ground water that has been outlined would not represent as wide a departure from past practices as those that have occurred in recent years in the control of oil and gas. Both fields started with the complete independence of the overlying owner; both have materially changed this ownership. To date the extent of the changes has been greater for oil and gas because the actual need for change and the agreement regarding this need and how to meet it have been greater than in the field of ground water.

In all discussions of how to meet existing problems resulting from ground water overdrafts, no effective method of statutory control can avoid the necessity for the enforcement of limitations on individual wells. As there may be several thousand wells operating in a ground water area, the mechanical problem of securing the records essential to the enforcement of controls has discouraged efforts to establish control. Similarly the engineering difficulties in a determination of the draft that could be maintained without depletion has discouraged all those faced with the administration of any ground water control. Such physical difficulties are inherent in the nature of ground water supplies and cannot be avoided. Conditions in some areas have reached or are approaching the point where the demand for some form of control will outweigh the difficulties of its application.